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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/693,803	10/20/2000	Rene Gerrit Heideman	080743/Universiteit	8677

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EXAMINER

KANG, JULIANA K

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 09/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/693,803

Applicant(s)

HEIDEMAN ET AL.

Examiner

Juliana K. Kang

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-19 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Inventorship

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Drawings

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the recited limitation of

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claim 20 of feed back circuit must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 14, 15, 17, 19, 20 and 24 are objected to because of the following informalities: the recited limitation "light transmitting channel" in lines 5-6 of claim 14 should be corrected to read –light guide channel – to be consistent with previously recited limitation in line 2 of claim 14.

The recited limitation "its specific value" in line 4 of claim 17 should be corrected to read -- ,said predetermined value --.

Regarding claim 19, it appears that "and" is missing between device and enabling in line 4.

Regarding claims 14, 15, 19 and 24, the recited phrase "and/or" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or "), thereby rendering the scope of the claim(s) unascertainable.

Regarding claim 20, it appears that claimed subject matter is not disclosed in remainder of specification. The claims as filed in the original specification are part of the disclosure and therefore, if an application as originally filed contains a claimed

disclosing material not discloses in the remainder of the specification, the applicant may
→ amend the specification to include the claimed subject matter.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16, 24 and 25-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 16, the phrase "the activable element comprises two types of segments" renders the claim indefinite because its independent claim 25 recites having at least one activable segment. Thus when only one segment is considered in claim 25, having two types of segments in claim 16 would not be possible.

Regarding claim 25, the phrase "in case of intensity modulation" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. For the examining purpose, only the limitation before the phrase "in case of intensity modulation" is considered.

Regarding claim 24, the recited limitation "said electro-optical layer" makes the claim vague and unclear. It is noted because the both inclusion layer and/or the light transmitting layer can be electro optical layer, it is not clear which electro optical layer "said electro-optical layer" is referring to.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Di Bin et al (U.S. Patent 5,280,172).

Di Bin et al disclose an optical fiber sensor for measuring a physical or chemical parameter comprising parts (9) having variations in refractive index that are made of active material (see abstract and column 3 lines 27-35).

Claims 14, 15, and 21-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Starodubov (U.S. Patent 6,058,226).

Regarding claims 21-23, Starodubov discloses an optical fiber sensor comprising an optical light guide device (70) and along a direction of light propagation, several types of segments (40, refractive index grating) wherein light is refracted by either physical modulation, stress modulation or other applicable techniques (see column 4 lines 57-66). Please note that the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the recited limitation, formation of segments is realized by means of a local physical or chemical treatment of an inclusion layer" has not been given patentable weight.

Regarding claim 24, as best understood by the Examiner with the 112 rejection as discussed above, Starodubov discloses electro-optical layers (50) on both sides of the segments.

Regarding claim 25, Starodubov discloses an optical sensor comprising a refractive index grating (40) which is sensitive to the external physical parameter (see column 4 lines 61-66).

Regarding claims 14 and 15, Starodubov further disclose electrodes (50) on both sides of the light guide channel (10) wherein the light guide channel includes an inclusion layer (30).

Claims 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Murphy et al (U.S. Patent 5,864,641).

Murphy et al disclose an optical fiber sensor having an optical light guide device having a light source and a light detector (see Fig. 4) and along a direction of light propagation, providing several types of segments (gratings with reactive coatings, each

type of segment showing a different refractive index profile depending on an external physical parameter (see column 7 lines 33-49). Please note that the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the recited limitation, formation of segments is realized by means of a local physical or chemical treatment of an inclusion layer" has not been given patentable weight.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16, 17, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Starodubov.

Regarding claim 16, as described above, Starodubov teaches claimed invention except the segments with widths being adapted to each other to obtain a maximum guided mode transmission. Even though Starodubov does not specifically teach the widths of the segments, Starodubov teaches that the system of the invention provides a way of altering the characteristics of light transmitted through an optical fiber to enhance the transmission of data through the fiber. Starodubov further teaches a tunable grating, and a chirped grating, thus, it would have been obvious to one with ordinary skill in the art to adjust any parameter including the widths of the segments to enhance the transmission of data through the fiber.

Regarding claims 17-19, as described above, Starodubov teaches claimed invention except the device that is constructed as a quasi-digital sensor. Starodubov discloses the device that can be used as a various types of filters (sensors) to detect gases, liquids, radiation (see abstract) and Starodubov also shows a large number of segments in Fig. 6, thus, it would have been obvious to one with ordinary skill in the art to use Starodubov's device as any kind of sensor including a quasi-digital sensor. Starodubov teaches that the sensor is to detect the various components including a liquid (see abstract). Since Starodubov's device is also used as a sensor it is obvious that the device measures the different light output parameters such as power spectrum of the light transmitted through the segments.

Allowable Subject Matter

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if applicant overcomes the objections discussed above and if rewritten in independent form including all of the limitations of the base claim and any intervening claims. This is no prior art of record that teaches or reasonably suggests claimed method wherein two types of segments, S1 and S2, are activated by two different quantities and maintaining the relative index profile of the S2 at a value equal to the refractive index profile of S1 by applying a suitable value B using a feed back circuit as set forth in claim 20.

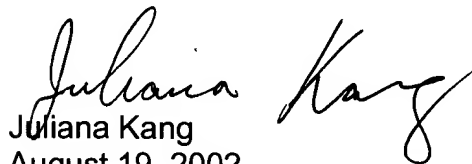
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Imoto et al (U.S. patent 4,790,614) show an optical fiber filter comprising a plurality of gaps in a waveguide layer wherein the gaps are filled with a material whose index of refraction is different than the waveguide layer. Cush et al (U.S. patent 5,210,404) show an optical sensor comprising a Bragg grating for better sensitivity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (703) 305-6259. The examiner can normally be reached on Mondays and Thursday 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-3072.


Juliana Kang
August 19, 2002


Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800